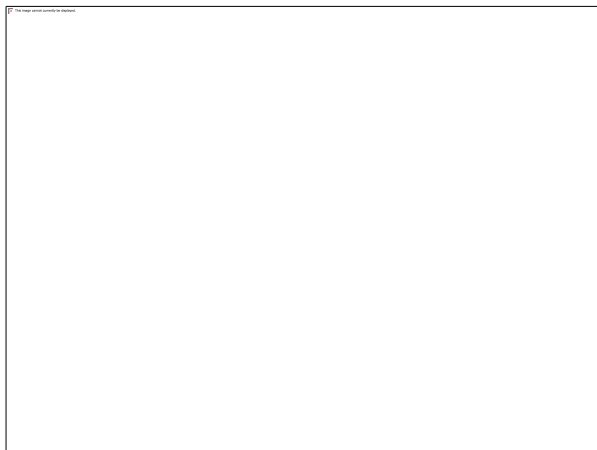


**BINDURA UNIVERSITY OF SCIENCE EDUCATION**  
**FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE**



**DEPARTMENT OF AGRICULTURE ECONOMICS AND MANAGEMENT**

***ASSESSING GOAT COMMERCIALIZATION IN SMALLHOLDER FARMING:  
OPPORTUNITY AND CHALLENGES. CASE STUDY OF NYAMANJIWA FARM  
WARD 30 UNDER MUREWA DISTRICT***

**BY**

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**A DISSERTATION SUBMITTED TO BINDURA UNIVERSITY OF SCIENCE  
EDUCATION IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF A  
BACHELOR OF AGRICULTURAL SCIENCE HONOURS DEGREE IN  
AGRICULTURAL ECONOMICS AND MANAGEMENT.**

## RELEASE FORM

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Challenges. Case study of Nyamanjiwa Farm Ward 30 under Murewa District

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## APPROVAL FORM

The undersigned attests to the supervision of the dissertation titled Assessing Goat Commercialization in Smallholder Farming: Opportunities and Challenges and recommends its acceptance to the Bindura University of Science Education. In partial fulfillment of a Bachelor of Agricultural Science Honors Degree in Agricultural Economics and Management, Kariwo Lincorn submitted a case study of Nyamanjiwa Farm Ward 30 in the Murewa District.

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## DECLARATION

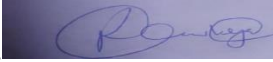
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I have supervised the project of the above-mentioned student and I'm convinced that the research project can be submitted.

Project supervisor: Dr. CHIVHEYA

Signature.....  .....

## **DEDICATION**

I would like to dedicate this thesis to my mother, my brother that is my family for their financial assistance and support that helped me in completing my educational studies.

## **ABSTRACT**

The study was done to assess goat commercialization for smallholder farmers in Nyamanjiwa Ward 30 under Murewa District Mashonaland East. The goals of this study were to assess the level of commercialization using the commercialization index, assess factors that affect the commercialization of goat farming for smallholder using linear regression model and lastly, farmers identify the problems smallholder farmers face using a Likert scale. In the area of study, they were 82 farmers who were into goat farming and 68 farmers were selected for the sample size using the Slovin sampling technique. Information from the farmers was gathered through structured surveys and interviews. The level of commercialization was 45% showing that the study area is under semi-commercialization. The results showed that age, number of goats owned, experience, market channel, and educational level have an influence on the commercialization of goat production for smallholder farmers. The challenges which are faced by smallholder farmers include the lack of title deeds, market information, and lack of improved breeds. The researcher recommends that Policymakers and stakeholders must prioritize efforts to address the challenges that are being faced by smallholder farmers. Furthermore, producers should establish cooperatives or associations and pool their resources as opposed to borrowing.

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## **LIST OF ABBREVIATIONS**

|                |                                                 |
|----------------|-------------------------------------------------|
| <b>AGRITEX</b> | Agricultural, Technical, and Extension Services |
| <b>FAO</b>     | Food and Agriculture Organization               |
| <b>HCI</b>     | Household Commercialization Index               |
| <b>OLS</b>     | Ordinary Least Squares regression               |
| <b>SPSS</b>    | Statistical Package for Social Science          |
| <b>ZIMSTAT</b> | Zimbabwe National Statistics Agency             |
| <b>NGO</b>     | Non-governmental organization                   |
| <b>MRDC</b>    | Murewa Rural District Council                   |

# CHAPTER 1

## 1.0. INTRODUCTION

This study is there to appraise goat commercialized in smallholder farmers by exploring at the prospect that are possibly to be accomplished, more so the hardships that they are possibly to endure in their goat production. Chapter one prevailing the origins information, problem expression, a research question, the comprehensive research's aims and hypotheses, and a defense for the study

## 1.1. BACKGROUND OF THE STUDY

Goat production is a crucial element of animal husbandry and contributes to food security and economic developments in many parts of the world. It provides source of finance, meat and milk for over a thousand of smallholder farmers (Devendra, 2012) In Zimbabwe goat farming is crucially collaborating to the country's agricultural sector with main body of goats being managed by smallholder farmers (Moyo, 2017). Conversely, in spite of its capability, goat production in Zimbabwe remains extensively autarkic, with limited commercialization (Mupeta, 2017)

Goats are also used for in traditional and religious ceremonies in many different civilizations (Zamuna & Moyo, 2019). Goats are adaptable and durable creatures that can live in a variety setting, including rocky terrain, tropical climes, as well as dry and semi-arid regions, according to the (NRC, 1981)

Due to an increase in demand for goat products like milk and meat, particularly in developing states where goat production is considered as a way of reducing poverty, the number of goats produced has been rising in recent years (Devendra & McLeroy, 1982) First Round Crop and Livestock Assessment Report 2020/2021 Season states that as of September 13, 2022, there were over 4 million goats in the country as a whole, up from 3.9 million in the previous season. The main body of smallholder farmers raise livestock for family consumption, making money, produce manure for use in crop production, and offer animals for insurance and contingency funding and for social status (Kusina, 2000). In expansion to the previously mentioned goat trading in the informal sector contributes significantly to household incomes and forms bigotry of the livelihoods of the inhabitants (Ben & Smith, 2008). Notably,

smallholder farmers in rural areas trade again for their consumption of small livestock like goats.

Zimbabwe's population is rapidly expanding, which has increased consumer demand for meat. Based on ZIMSTAT Population report, Zimbabwe had a population of 15 178 979 people as of April 20, 2022, with 7 289 585 (48%) men and 7 889 421 (52%) females, for sex ratio of 92 males for every 100 women. It is clear from what has been mentioned here that more meat must be produced in order to meet consumer demand. Moreover, previously discussed factors, consumers' tastes and preferences have rapidly changed over the years due to the fact that demand for chevon meat has overtaken the population of goats, whilst the supply is quiet limited, due to the subsistence practices by smallholder farmers.

Murewa district, located in Mashonaland East province, is one of the main body goat-production areas in Zimbabwe (Moyo & Tichaawa, 2017). The district distinguished by high population density, curtailed landholdings, and a reliance on rain-fed agriculture (Mupeta, et al., 2017). Regardless these tribulations, smallholder farmers in Murewa district have been implicated in goat production for many years, with the mass managing goat for provision purposes ( (Moyo & Tichaawa, 2017)

Nevertheless, in recent years, there has been a growing passion in commercialized of goat production in Murewa district, driven by increasing demand for goat milk and meat in urban areas (Mupeta, et al., 2017). Commercialized of goat production has the potential to improve the livelihoods of small holder farmers, as it creates employment, income generation and cultural significance where goats may hold cultural or symbolic significance with the Jerusalem Mbende tradition as their production could help to support and preserve these cultural practices (Mapiye & Mupeta, 2009).

However, goat farming undergoes a number of hardships, including low productivity, illness, insufficient support systems and poor marketing strategies (Zamuna & Moyo, 2019), as a result, research and development programs are required to improve the productivity and sustainability of goat production systems globally.

## **1.2. PROBLEM STATEMENT**

Globally diseases are a challenge in goats production, up to 60% of goat farmer's losses due to diseases such as foot and mouth (WorldOrganisationForAnimalHealth, 2003), similarly to Africa, diseases challenge 60% of goat farmers losses their goats due to diseases (IFAD,

2022), as this motivates disease prevalence in Zimbabwe, 70 %high mortality rates due to tick borne diseases (Mashiringwani, 2020).

Market access is another significant hurdle, the World Bank indicates that 55% of goat producers lack access to formal markets (WorldBank, 2023), whilst in Zimbabwe 60% of goat farmers reporting difficulties in marketing (ZimStat, 2020)

World-wide market access and infrastructure are factors that affects goat production, 60% of goat farmers in developing countries reports difficulties in accessing markets due to inadequate transportation and storage facilities (IFAD, 2021), as this directly affects lack of formal markets and infrastructure shortages rises to 70% on goat production in Africa (IFAD, 2022), as this factors do not only end there, in Zimbabwe poor infrastructure 60% roads in Ward 30 are impassable during rainy seasons (MurewaRDC, 2022). All these factors affect the commercialisation of goat production.

According to the Food and Agriculture Organisation (FAO, n.d.), there are only about 30% of global goat production is considered be commercialized, whilst in Africa according to the African Unions Inter-African Bureau for Animal Resources (AU-IBAR, 2019), only 20% of goat production in Africa are being considered commercialised (AU-IBAR, 2019), as directly motivate Zimbabwe's level of commercialisation rises to 50% due to global market demand (ZimStat, 2020)

### **1.3. MAIN OBJECTIVE**

This study's primary goal is to evaluate the commercialization of goat farming by smallholder farmers by examining the potential that may arise from this as well as the production-related difficulties.

### **1.4. RESEARCH OBJECTIVES**

#### **Objective1**

- To access the level of commercialization on goat production in Murewa District ward 30

#### **Objective 2**



- To assess factors affecting the commercialization of goat production in Murewa district ward 30.

#### Objective 3

- To analyze the challenges that being faced by goat production farmers in Murewa District.

### **1.5. RESEARCH QUESTIONS**

- How many goats have you produced and how many have you sold?
- Which factors affects the goat commercialization?
- What challenges are you facing in your goat production?

### **1.6. HYPOTHESIS OF THE STUDY**

Commercialization of goats improves standards of living.

Commercialization of goat farming does not improve standards of living.

### **1.7. JUSTIFICATION OF THE STUDY**

Goat farming is mostly carried out by smallholder's farmers in developing countries like Zimbabwe, who are mainly poor people, hence this research may be useful and helpful in trying to fight poverty reduction and boosting their living situations by switching from subsistence farming to commercial farming, which is more gainful. More so, it is more likely that food security will improve as the country's population endures to rise and as any surplus goat meat may be exported to other countries. Likewise, the January sickness caused cattle deaths, which granted to the overall country's meat shortages; therefore, the availability of goat meat can address this issue.

### **1.8. ORGANIZATION OF THE STUDY**

There are five chapters in this book. The context, problem statement, research questions, objectives, and hypothesis, as well as information on the study's organization and justification, are all presented in the introduction to Chapter 1. In the second chapter, the theories pertaining to the study's goals are reviewed. The geographical focus and research methods are both presented in Chapter 3 of the study. Chapter 4 presents a summary of the investigation as well as its findings. Chapter 5 of the study then presents the study's findings and suggestions.

### **1.9. LIMITATION OF THE STUDY**

- Some farmers did not want to give accurate information since they considered it as confidential.
- Lack of transport because some of the farmers are far from the main roads and impassable.
- Lack of funds since the research was self-funded.

## **CHAPTER 2**

### **2.0. LITERATURE REVIEW**

This chapter begins by defining the terms "commercialization" and "smallholder farmers," give a summary of goat production for smallholder farmers, and then inspect a literature review of smallholder goat farmers' commercialization of goats, the hardships they face, and eventually, the factors affecting smallholder goat farmers' commercialization of goats.

### **2.1. DEFINITION OF THE KEY TERMS**

#### **2.1.1 COMMERCIALIZATION**

Commercialization is the process of introducing a new product or services into the market, making it available for sale to the public, often involving activities like marketing, sales and distribution to reach consumers (Abafita, et al., 2016).

#### **2.1.2. SMALLHOLDER FARMERS**

Describes the sharing of grazing pastures by farmers who own an average of 6 hectares (Sibanda, 2005). (FAO, 2014) Defined a smallholder farmer as a farmer with a small piece of farm and rely mainly on family labor. Small holder is the connotation of limited land availability. However, many other aspects of smallness are critical to characterizing resource poor small farmers in the developing world such as limited capital (including animals), fragmented holdings and limited access to inputs.

### **2.2. OVERVIEW OF SMALLHOLDER GOAT PRODUCTION**

Low-input and low-output systems, as well as the availability of small quantity resources for goat farming, are roles and function of smallholder goat farming (Muhammad, 2017; Muhammad, et al., 2017). Goat production in smallholder systems is assorted, varies between and within countries, and is influenced by socioeconomic, sociocultural, and agro-ecological factors (FAO, 2017). Goats are usually raised in smallholder systems as they provide meat or milk, and they are important to guarantee food security and lessening hardships in many rural areas (Dossa, et al., 2017).

In smallholder farming systems, goats are reared by extensive grazing, feeding on agricultural made products, and collecting on roughage. High mortality rates and low productivity are the

results of smallholder farmers' regular absence of knowledge and experience in managing their goats (FAO, 2017). Low productivity and high death rates in smallholder goat production systems are also caused by unskilled management options, animal health, and restricted access or no access to veterinary services (Muhammad, et al., 2017).

There is a need for ability building and extension services to give smallholder farmers the experience and sound decision they need to manage their goats profitably in order to rise the productivity and sustainability of smallholder goat production (Dossa, et al., 2017). The development of infrastructure, greater access to veterinary services, and entry to markets and finance facilities are all things that governments and non-governmental organizations (NGOs) must support for smallholders (FAO, 2017).

### **2.2.1. THE LEVEL OF COMMERCIALIZATION BY SMALLHOLDER GOAT FARMERS**

Smallholder goat farmers play a vital aspect in the agricultural economy, mostly in developing countries. But there has sound word over how commercialized they are. While some sources indicate a supported high level of commercialization, others tend to say that goat smallholder farmers face many hardships and have limited access to markets.

(Seifu, et al., 2017) Study in Ethiopia said that goat smallholder farmers had a high level of commercialization, with more than 50% of their goats being sold in marketplaces. The study assigned the vast claim for goat meat and live goats, as well as the presence of well-established market chains and networks.

Same researches were made by (Ngingi, et al., 2016) in their research of smallholder goat farmers in Kenya, who discovered that they had a reasonable level of commercialization and sold about 40% of their goats at marketplaces. The survey stated that some of the hardships these farmers encountered as being a lack of market knowledge and access to credit.

However, other study has found that goat smallholder farmers face a number of hardships when trying to market their goods and have restricted access to the market. For instance, a 2019 study by Amole et al. in Nigeria found that goat smallholder farmers had a low level of commercialization, with less than 20% of their goats sold in markets. Unsuitable infrastructure, a lack of market outlets, and limited access to market information are some of the challenges these farmers face, according to the report.

Similar conclusions were encountered by (Gelaye, et al., 2019), who found that smallholder farmers in Ethiopia had a low level of commercialization, with only 25% of their goats being sold in markets. According to the report, these farmers experience a number of challenges, such as limited access to market information, ineffective marketing plans, and low goat prices.

The commercialization level of smallholder goat farmers can, however, alter over time when farmers gain knowledge, gain access to new markets, and obtain assistance from the government through development programs, (Gebbru, 2015). With the correct assistance and materials, smallholder farmers can increase their degree of commercialization and enhance their standard of living by rearing goats.

### ***2.2.2. THE FACTORS THAT AFFECT THE COMMERCIALIZATION OF GOATS BY THE SMALLHOLDER FARMERS***

The ability of smallholder goat farmers to commercialize their operations is influenced by many factors, including access to capital, knowledge and technical skills, market data, infrastructure and transportation, and the availability of supplies and services.

Smallholder farmers frequently lack the funding needed to expand their operations and make investments in their businesses. This can be brought on by difficulty obtaining credit.

According to several research (Napasirth & Luisa, 2014); (Ayinde & Oyekale, 2013), having access to credit has a good impact on the commercialization of smallholder goat farming.

The technical skilled and knowledge required to improve productivity may be lacking among smallholder farmers. Investing in training and extension services has been stated as a positive impact on the commercialization of smallholder goat farming (Lwelamira.J & Kifaro, 2015); (Kiptot & Franzel, 2016).

The market's needs, prices, and distribution systems could be unknown to smallholder farmers. According to a study by (Ouma & Abdulai, 2016)done in Kenya, access to market information had a significant impact on the commercialization of smallholder goat farming.

Smallholder farmers may face hardships transaction costs as a result of inadequate infrastructure and transportation. For instance, a study that was done in Uganda by (Bagire, et al., 2018) shows that insufficient transportation infrastructure has a detrimental impact on the commercialization of smallholder farming.

Smallholder farmers might not have access to inputs like high-quality breeding stock, veterinary services, and other inputs needed for commercial goat farming. According to several research (Ayinde & Oyekale, 2014); (Lwelamira.J & Kifaro, 2015), the availability of high-quality inputs has a positive impact on commercialization in smallholder goat farming.

### **2.2.3. THE CHALLENGES THAT ARE BEING FACED BY GOAT SMALLHOLDER FARMERS**

The commercialization of goat farming presents a number of hardships for smallholder farmers which includes decline in production, restricted market access, inaccessible infrastructure, a lack of technical expertise, and restricted loan availability. Solution focused on these issues are required to boost commercialization.

Smallholder farmers constantly lack the funding helpful in expanding their business and make better standards. Lack of credit availability may be the cause of this. According to a number of studies, access to financing poses a significant barrier to the commercialization of smallholder goat farming (Napasirth & Luisa, 2014); (Ayinde & Oyekale, 2013; Anon., n.d.).

Smallholder farmers may face significant transaction costs as a result of shortage of infrastructure and logistics. Farmers find it difficult to access markets and inputs due to a lack of transportation, mostly in rural areas. According to studies, one of the biggest drawbacks to smallholder goat farmers' commercialization is a lack or shortage of infrastructure (Bagire, et al., 2018); (Kiptot & Franzel, 2016).

One of the major challenges to smallholder farmers' capability to commercialize goats is low production. This could be brought on by a lack of accessibility to high-quality inputs such as breeding stock, feeds and supplements, veterinary services, and inputs. According to a number of studies (Ayinde & Oyekale, 2013); (Lwelamira.J & Kifaro, 2015), access to high-quality inputs is crucial for increasing production in smallholder goat farming.

Most of the studies have shown that one of the major drawbacks to commercialization for smallholder farmers is a lack of markets. A lack of knowledge about market ways and prices makes it difficult for smallholder farmers to access markets. In addition, smallholder farmers have trouble producing enough food to meet both the quality and quantity demands of the market (Napasirth & Luisa, 2014); (WinrockInternatiol, 2019).

### 2.3. EMPIRICAL LITERATURE REVIEW

More than two models have been in use to analyze the commercialization of goat production by smallholder farmers in Murewa District. There was a study put on by (Kumar & Jain, 2002) that was mainly on assessing how goat farmers in arid regions of Rajasthan used goat farming as a way of living to aim for their food security. The goal for this research was to increase quantity on the linkages on various aspects of the farming system as also noticing the factors that influence goat commercialization. Static Input-output model was used following the work of (Abafita, et al., 2016) (Ayinde, , et al., 2017) and (Kumar & Jain, 2002). This model was instrumental in illustrating the relativeness between unique sectors in the farming system. Random sampling method was used for data collection.

The study used a simple random sampling technique to avoid bias and makes sure that were collected from a huge range of individuals. This approach was essential to provide equality of opportunity for all participants to be included, not as same as stratified random sampling, which targets specific group.

This study concurs with that of (Lwelamira.J & Kifaro, 2015); (Kiptot & Franzel, 2016), the technical expertise and knowledge required to boost productivity may be lacking among smallholder farmers. Investing in training and extension services has been shown to have a positive impact on the commercialization of smallholder goat farming. In Murewa District they do practices goat commercialization which is similar to one in Osun State Nigeria (Fakoyo & Oloruntuba, 2009). In Murewa District 55 percent of the goat farmers are 50 years and above, there are likely to face challenges such as lack of capital, or credit, labor, no formal markets, poor infrastructure including roads were highlighted as main hardships to goat production.

In this research, a linear regression model was in use to assess factors that affect goat commercialization in Murewa District. The analysis stated that elements such as market access, transportation challenges, labor, limited access to money, experience, extension

assistance and education, so linear regression addresses these dependent variables and the total number goats sold as a dependent variable.

Regression analysis, past studies have employed production function and supply response models to estimate how various factors affect agricultural output. The livestock subsector contributes significantly to the economies of developing countries through food production, employment creation, foreign exchange earnings, and by serving as a market for industrial products.

A structured questionnaire on household was used. 68 goat farmers were administered and selected using a Slovin's formula. The formula is helpful when the behavior of a population which is unknown. Looking on the total population of Nyamanjiwa Farm, Ward 30, Murewa District and specific margin of error, the sample size was determined (Siddik, 2023). The target strata.

Farmers in Murewa District ward 30. The farmers lack information on the registered markets which are formal markets, how the goats are graded, and what age to sell their goats so that they make more money. Due to the lack of information on markets, the farmers end up slaughtering at their homes and selling to middlemen and butcheries at lower prices and these middlemen and butcheries then sell the meat to the final users at higher prices so as to obtain profits. This study agrees with that done (Napasirth & Luisa, 2014); (WinrockInternatiol, 2019), lack of knowledge about market routes and prices makes it difficult for smallholder farmers to access markets. In addition, smallholder farmers have trouble producing enough food to meet both the quality and quantity demands of the market. This approach was similar to that of (Lin, 2002) who look at how China's agricultural reforms had an impact on goat commercialization output and other livestock productivity.



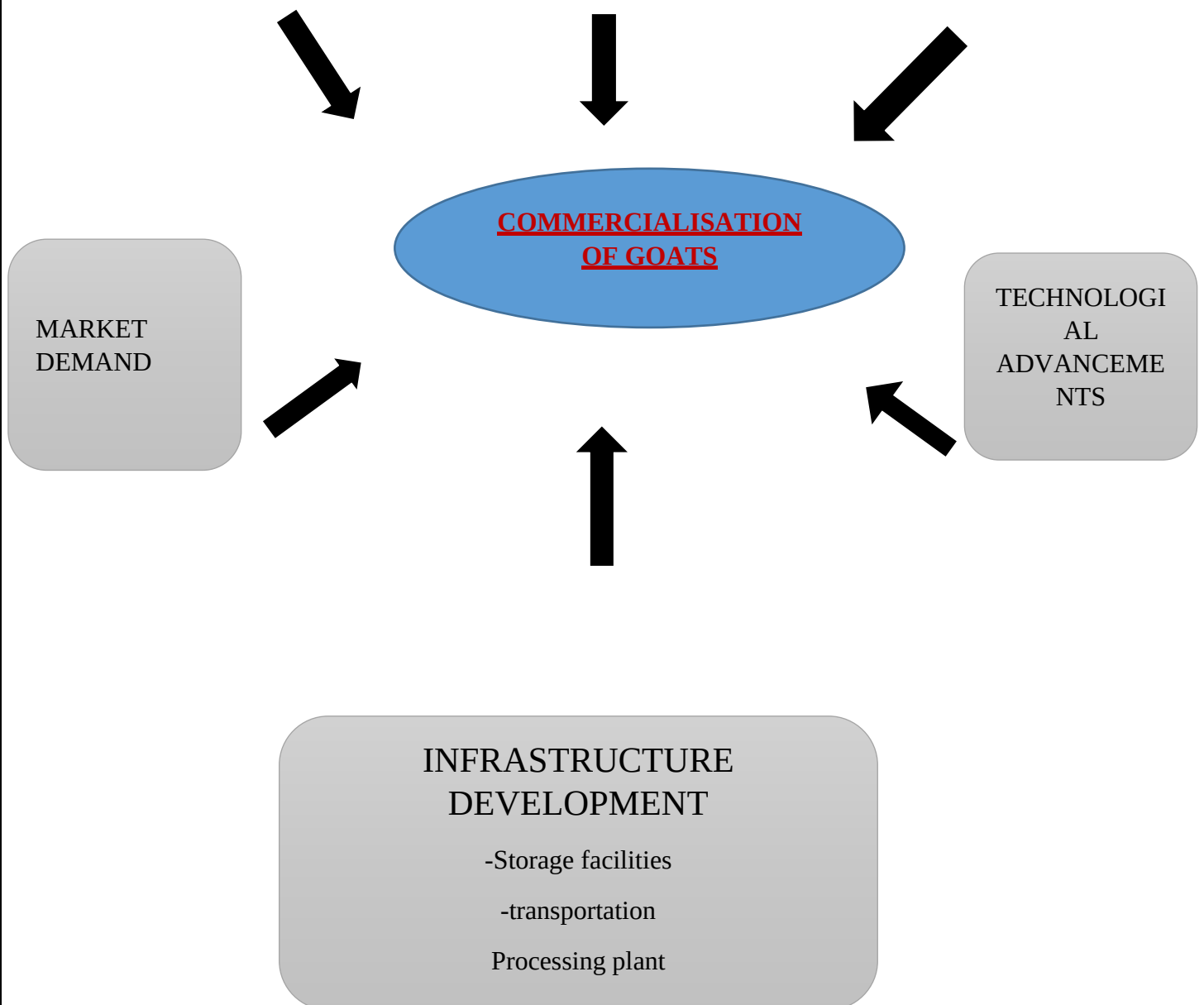
## 2.4. CONCEPTUAL FRAMEWORK

Despite the great work done by livestock research institutes, (Chukungwe & Onyegbule, 2006) sound decided that farmers still struggle to benefit from higher market prices as this is caused by many challenges, they in counter. All this motivated the author to sight closely at the different factors that affects the level of goat commercialization and to understand how each of these factors matters. The aim is to suggest ways to come up with a solution to solve these problems and also to highlight the coming opportunities in goat commercialization.

The diagram below highlighted the main factors that are believed are the command to affect goat commercialization for smallholder farmers in Murewa District. This idea is focused on work done by (Bagchi & Udo, 2007). The framework grouped these hardships into six main categories and looked at both things that come from inside the farm and from outside that affect how farmers raise and commercialize goats.

### CONCEPTUAL FRAMEWORK





*Figure 1: Conceptual framework*

The diagram above is a conceptual framework that illustrates the internal and external factors that affect goat commercialization. These factors include lack of infrastructure, market assess, lack of technology for instance the implementation of artificial insemination which is essential in improving goats breeds as this speeds up the level of commercialization, social cultural factors like beliefs as goats are essential to other religion as they save them for ceremonies like Kurowa guva. Market demand and regulation policy from the government

also affect goat commercialization, these factors because challenges to goat commercialization as they will reduce the level of commercialization. There are also factors like age, education level, extension help, number of goats owned, gender and years of experience as these factors directly affect goat commercialization.

## **2.5. THEORETICAL FRAMEWORK**

### ***2.5.1. PRODUCTION FUNCTION MODEL***

The increase in population size is a significant cause factor in discussions the development of the economy. This link was discussed by (Schultz, 2005) as he highlighted a way on agricultural expansion is currently stated as a key driver of economic growth. He then ranked agriculture production based on its contribution to national and global economic

development, as it also underlying its important role in maximizing national income. Agriculture is the main source of nation income also on developing the entire infrastructures.

In the whole world agriculture productions varies from large-scale which is commercialized systems to small-scale subsistence farming. Smallholder farmers in Zimbabwe are the most dominant as a primary producer on goat commercialization. They rear goats to sustain their livelihood needs and the remainder is there generating income. The goat to be commercialized varies due to farm size and available resources.

Agriculture is a transport to economic growth (Abafita, et al., 2016). The type and level of investment made in the sector are crucial in achieving this advantage. Farmers were subsided with incentives that are essential in encouraging the increasing on the level of productivity. He also debated that old traditional agriculture systems often reach a state of equality that is difficult to change. In such ways, production inefficiencies are unique and labor force becomes the major vital attribute in managing output.

Smallholder families, operating on small land, is there to invest more labor per unit of land (Mellor, 2014). Later on, they tend to obtain higher yields per hectare as a comparison to families with larger land holdings. Hence is a very low-income settings, however, the marginal productivity of labor may remain so low that even increased access to customers products do not raise utility on subsistence.

When analyzing the relativeness between inputs and outputs in commercialization, researchers mostly use the production function model. This function model differentiates how unique resources land, labor and capital contribute to total production. More land is cultivated, outcomes increase accordingly (Ayinde, , et al., 2017). An easy form of this relation is expressed as:

$$Q=f(Ld., C, L)$$

Where:

Q=quantity of output

Ld. =land to be used

C = Capital

L = Labor

A production function represents the maximum output obtained with a given set of inputs. A more specific version, the Cobb-Douglas production function, is rarely used to measure how changes in labor and capital affect output. It is expressed as:

$$Q = A \cdot L^{\alpha} \cdot K^{\beta}$$

In this formula:

Q = Output

A = Level of technology

L = Labor input

K = Capital input

$\alpha$  and  $\beta$  = Output elasticity's of labor and capital, respectively

### ***2.5.2. COBB-DOUGLAS FUNCTION***

Cobb-Douglas functional model of production is mostly used to focus on the relativeness of an output to inputs. Cobb-Douglas shows that DISTINCTIVE CASE of production model is homogenous of the degree one (Henderson & Richard, 1980). His production function is noted by:

---

$$(2)$$

Where Q=output A:

Output A = technology used to produce the output

L = Labor

K = Capital

$\alpha$  and  $\beta$  = are the output elasticity's of labor and capital, respectively the functional relationship has to be specified so as to find the impact of factors on Goat commercialization.

### **2.5.3 SPECIFICATIONS OF THE STUDY MODEL**

Ordinary least squares regression (OLS) is a commonly used technique for estimating the coefficients of linear regression equations that explain the relationship between one or more independent quantitative variables and a dependent variable (simple or multiple linear regression). In mathematics, it is written as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots, + \beta_8 X_8 + \mu$$

Where,

Y = dependent variable (total number of goats sold)

$\beta_0$  = constant

$\beta_1 - \beta_8$  = parameters of estimates

$X_{1-8}$  = shows the independent variables of the model

$X_1$  = age (years)

$X_2$  = Gender (female 1, male 0)

$X_3$  = total number of goats owned

$X_4$  = experience (years)

$X_5$  = market channel

$X_6$  = access to extension services provision (yes =1, no =0)

$X_7$  = educational level (never =0, primary level =1, secondary level = 2, tertiary level =3)

$\mu$  = Error term

## **CHAPTER 3**

### **3.0. METHODOLOGY**

This chapter will focus on the research design and provide rationale for the use of both quantitative and qualitative methodologies in this study, which aims to assess the commercialization of goat production in Nyamanjiwa Farm ward 30 Murewa District. The research methodology, which is presented in this chapter, is required in order to create the research questions and notice the study goals as stated in chapter one. The researcher will

also describe the methodology used, as well as the demographics, sample size, data collection techniques, and safety precautions needed for documenting it.

### **3.1. DESCRIPTION OF AREA STUDY**

The study was carried out in the Murewa District's Nyamanjiwa Farm Ward 30 of Mashonaland East Province Zimbabwe. It is situated in agricultural region 3. Rainfall in the summer is sparse and moderately heavy (700–1000mm). This area is suitable for semi-intensive farming methods like the raising of livestock and crops. The study area in the Murewa District is located for about 88km from Harare going east. The district's main industry, which is mostly agriculture, is located in a rural area.

#### **3.1.1. MAP OF STUDY OF AREA**





*Figure 2: Map of a study area (Murewa district)*

### **3.2. RESEARCH DESIGN**

The study design is a conceptual framework for data collection, measurement, and analysis that balances relevance and economy, according to (Crosswell & Kothari, 2012 and 2004) (2004). It acts as a structure for the planning, carrying out, and reviewing of research (Kothari, 2004). The research design also takes into account the methods and techniques utilized to perform scientific research.

The goal of quantitative research is to explain observations through the collection of numerical data and the application of statistically based analysis techniques (Muijis, 2004). The focus of this plan is on objective measurement and data analysis using a range of techniques, including numerical, mathematical, and statistical ones. Secondary sources from which quantitative data was also gathered included books, both published and unpublished, projects, theses, journal articles, research papers, and statistics provided by the district extension officer.

The researcher also employed a qualitative research method to gather information about the goat smallholder farmers in Nyamanjiwa Farm Ward 30. According to (Denzin & Lincoln, 2000), analytical and naturalistic standards are used in qualitative research. The researcher investigates things as they appear in nature while taking into account what farmers contribute to those occurrences in order to crack and expand the of meaning events. Qualitative research has the advantage of enabling the researcher to get information directly from individuals through interviews (Miles & Huberman, 2003). Observations, interviews, questionnaires, and other qualitative data collection methods were also used.

### **3.3. POPULATION AND1SAMPLE SIZE**

#### **3.3.1. POPULATION**

The term "population" refers to the total group of individuals components who share common characteristics that could be included in any research (Smith, 2003). The sample was taken from Nyamanjiwa Farm Ward 30 where the population is the total number of residents (Bush & Burn, 2010). Farmers who were married, single, or divorced were all part of the target demographic.

### **3.3.2. SAMPLE AND SAMPLE SIZE**

A sample is a subset of the population chosen depending on the qualities from which inferences will be made (Kitambara, 2013). The characteristics that are examined to learn more about society as a whole are sometimes referred to as a representative portion, one from a large whole, or a finite subset of the statistical population. For instance, in this scenario, I'm making an evaluation on goat commercialization for smallholder farmers. Over 82 farmers live in the study area where the researcher is doing his research.

### **3.3.3. SAMPLE SIZE**

From a population of over 82 farmers who are into goat farming, the researcher computed the sample size using the Slovin data sampling formula. It is utilized when the population's behavior is unknown. Given a total population (N) and error margin/ margin of error (e), it is used to compute the number of samples (n), (Siddik, 2023). The equation below was used to calculate the sample size from this random sampling technique, which resulted in 68 farmers being selected.

Where,

n = number of samples

N = total population

e = margin of error

$$n = \frac{N}{1 + N(e)^2}$$

$$n = 82 / [1 + 82(0.05)^2]$$

$$n = 68$$

### **3.3.4. SAMPLING PROCEDURES**

The process of using specific things (people) from a broad population to draw conclusions about society is known as the sampling procedure (Zimkund, 2003). Purposeful sampling was a method the researcher used. With the non-probability intentional sampling method, the researcher selects the sample's participants based on a range of factors, such as their interest in participating in the study or their anticipated knowledge of the research topic (Oliver &

Jupp, 2016). This approach was chosen because it has the benefits of being affordable, time-saving due to accessibility, and enabling the researcher to select qualified individuals who possess the required traits (Kothari, 2004). According to (Kothari, 2004), deliberate sampling is prone to bias and is highly susceptible to prejudice. The researcher chose the sample because it fit her needs, was close by because she lives nearby, and represented a range of ages.

### **3.4. DATA COLLECTION METHOD**

These are instruments that are created to measure the qualities of study participants and important information's factors. A research project's validity and reliability are largely dependent on the suitability of the research instrument that is selected, according to (Annum, 2014). Research instruments constitute the core of any research study. An observation checklist, interviews, and questionnaires were used in this study effort. The aforementioned tools were supplemented with document analysis as an additional source of data.

#### **3.4.1. QUESTIONNAIRES**

A questionnaire is a research instruments that have series of written or printed questions created to collect data from people. It is also group of written inquiries designed to elicit responses from participants in order to gather information. According to (Bulmer, 2004), a questionnaire is a tried-and-true method in social science research for learning about participants' social traits, present and previous behaviors, attitudes, beliefs, and reasons for acting in relation to the research issue. According to (Oppenheim, 1992), a questionnaire can be used to collect primary data consisting of a series of written questions that's answers in a predetermined word. A practical technique to get comparable data from a large number of people is using questionnaires. For the purposes of this study, open-ended questions as well as closed-ended questions with pre-coded responses were both used. They were used to ask farmers for information.

#### **3.4.2. INTERVIEWS**

An interview is a structured or unstructured communication between two or more people as it can be formal or informal. Interviews entail a methodical approach of speaking and listening to people, enabling the recording of data from people through conversations (Oppenheim, 2006). It also requires a relationship of conservation between a researcher and the person

being interviewed (Tewksbury, 2009). Interviews are important because they provide the interviewed person a chance to be clear, which permits respondents to give more thorough answers. Interviews were mainly done for two purposes during the research: first, to learn the interviewee's understanding, skills and vision on goat production. In spite of the fact that interviews are not congruent to routine conversations, they should be conducted carefully to ensure reliability and validity rather than reflecting the researcher's bias. The two types of interview approaches utilized for data collection are semi-structured and in-depth interviews, and they were chosen to ensure reliability and validity.

When the researcher wants to spend more time with the subject and fully comprehend the responses given, semi-structured interviews are performed (Harrell & Bradley, 2009). An interview guide was used to supplement this interview technique, allowing the researcher to ensure that the same main areas of evidence would be gleaned from each subject. According to (Turner, 2010), in-depth interviews, also known as unstructured interviews, are interviews that are conducted "off the top of your head," relying solely on the spontaneous invention of questions during regular interactive sessions. These gave the chance for in-depth and careful interviewing. Interviews with important informants were conducted at the time of data collection.

### **3.5. DATA ANALYSIS METHODS**

The table below lists the analytical tools that were coupled with each of the three objectives, and this chapter will also provide the analytical tool's formulas. The data analysis for the three objectives used the statistical package for social science (version 2023) computer software.

*Table 1: showing the objectives and their analytical tools*

| <b>OBJECTIVE</b>                                               | <b>RESEARCH QUESTION</b>                                     | <b>ANALYTICAL TOOLS</b>              | <b>FORMULAE</b>                                                                                                                | <b>DATA CONCEPT</b>                         | <b>DATA VARIABLES</b>                                                                                                   |
|----------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Assessing the level of commercialization                       | How many goats have you produced and how many have you sold? | Commercialization index              | $\text{HCI} = \frac{\text{Number of goats sold}}{\text{Number of goats Produced}} \times 100$                                  | Commercialization level<br>-Market level    | -Number of goats sold<br>-number of goats Produced                                                                      |
| To analyze the factors affecting commercialization             | Which factors affects the goat commercialization?            | Regression analysis<br>OLS           | $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_8 X_8 + \mu$                                                          | -<br>Production factors<br>-Farm attributes | -age<br>-gender<br>-experience<br>-number of goats owned<br>-market channel<br>-education level<br>-external provisions |
| To analyze the challenges that are being faced by goat farmers | What challenges are you facing in your goat production?      | Descriptive analysis<br>Likert scale | $\mu = (\sum x) / n$ $(1 * \text{Freq}_1 + 2 * \text{Freq}_2 + 3 * \text{Freq}_3 + 4 * \text{Freq}_4) / \text{Total Response}$ | -<br>Production constraints and challenges  | -Market access<br>-Disease management<br>-Feed available                                                                |

### 3.5.1. FORMULAS OF ANALYTICAL TOOLS

#### Objective 1: Commercialization index

The degree of commercialization among smallholder farmers was assessed using the Household Commercialization Index (HCI). It assesses how much domestic goat production is focused on the market. The degree of commercialization increases as the index gets closer to one (Paul & Guild, 1999 and 2011); (Govere, 1999). A value of zero would apply to a completely subsistence-oriented society. In mathematics, it is written as:

$$\text{HCI} = \frac{\text{Total number of goats sold}}{\text{Total number of goats produced}} \times 100$$

## **Objective 2: Regression analysis OLS**

Ordinary least squares regression (OLS) is a commonly used technique for estimating the coefficients of linear regression equations that explain the relationship between one or more independent quantitative variables and a dependent variable (simple or multiple linear regression). In mathematics, it is written as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_8 X_8 + \mu$$

Where,

$Y$  = dependent variable (total number of goats sold)

$\beta_0$  = constant

$\beta_1 - \beta_8$  = parameters of estimates

$X_{1-8}$  = shows the independent variables of the model

$X_1$  = age (years)

$X_2$  = Gender (female 1, male 0)

$X_3$  = total number of goats owned

$X_4$  = experience (years)

$X_5$  = market channel

$X_6$  = access to extension services provision (yes =1, no =0)

$X_7$  = educational level (never =0, primary level =1, secondary level = 2, tertiary level =3)

$\mu$  = Error term

### **Objective 3: Likert scale**

The Likert scale was created by Professor Rinses Likert in the early 1990s. By measuring how strongly people agreed or disagreed with a statement, he hoped to learn about people's attitudes toward it (Anthony & Sullivan, 2013). The scale enables respondents to select the option that best describes their position. In order to assess the difficulties smallholder goat farmers' experience, the researcher used this scale. To rate the problems that goat smallholder farmers face, a scale made up of four Likert points was created. Each participant checked the number where his or her tasks were ranked out of a possible four. The next step is to calculate the mean scale ranking for each challenge and put the results on a graph. The following shows how the changes are going to be ranked on a scale where:

1 = never

2 = rarely

3 = moderate level

4 = Very frequently

### **3.6. STUDY LIMITATIONS**

Using information gathered from a survey conducted in Nyamanjiwa Farm Ward 30 Murewa District, the study responded to the research questions. Because this research was a case study, the data analysis's findings may be not accurate to represent the circumstances of farmers in other provinces of Zimbabwe that operate in a similar manner. The study's findings may not be affected by this, though, as many goat smallholder farmers in the nation deal with very similar hardships. Since the reliability of the replies provided by the homes was crucial to the validity of our findings, the researcher and his team made an effort to increase the efficiency of data collecting.

### **3.7. ETHICAL ISSUES**

The respondents were made aware of the study's nature and objectives, and participation was entirely voluntary. There was no promise of gifts in exchange for participation or information. Everyone who responded did so voluntarily from the bottom of their hearts. The privacy of the respondents' information was maintained throughout the whole research procedure. Data gathered from household farmers was and is still kept private and is solely used for research. After the study is finished, the questionnaires and the data will be discarded.



## CHAPTER 4

### 4.0. INTRODUCTION

This chapter consists of data analysis, presentation, interpretation, and discussion. This chapter is organized according to the objectives of the study and the results are analyzed in the form of a graph and tables using SPSS software.

### 4.1. OBJECTIVE 1: ASSESSING THE LEVEL OF COMMERCIALIZATION

*Table 2 showing the level of commercialization*

| Level of commercialization | Minimum | Maximum | Mean   | Standard deviation | Number |
|----------------------------|---------|---------|--------|--------------------|--------|
| 2022 index                 | 0.00    | 0.60    | 0.3928 | 0.20044            | 68     |
| 2023 index                 | 0.00    | 0.70    | 0.4514 | 0.13469            | 68     |
| 2024 index                 | 0.11    | 0.79    | 0.4047 | 0.12801            | 68     |
| Average sample             | 0.04    | 0.69    | 0.4163 | 0.15438            | 68     |
|                            |         |         |        |                    |        |

Source: own survey (2025).

Sample smallholder farmers in Murewa District were categorized into three groups based on the commercialization index scores, with subsistence falling between 0 and 25%, semi-commercialization falling between 25% and 50%, and commercialization falling above 50%, as these has been stated by (Goitom, 2019). The results of the study show that the level of commercialization had a minimum value of 0.00 (subsistence) and a maximum value of 0.79 (commercialized), with a mean and standard deviation of 0.4163 and 0.15438, respectively.

According to (Goitom, 2019) 25% to 50% means there is semi-commercialization so do the results on this study the level of commercialization was semi-commercialized.

#### 4.2. OBJECTIVE 2: TO ANALYZE THE FACTORS AFFECTING COMMERCIALIZATION

Linear regression was applied to analyze the factors affecting commercialization using the number of goats sold being the dependent variable and other several factors such as gender, age of farmers, number of goats owned, the experience of a farmer, market channel, access to extension services and educational level used as explanatory variables or independent variables.

*Table 3: model of summary*

| Model | R     | R Square | Adjusted Square | Std. Error of the Estimate |
|-------|-------|----------|-----------------|----------------------------|
| 1     | 0.947 | 0.897    | 0.0878          | 3.766                      |

Source: own survey (2025)

Table 3 above shows the results findings of the linear regression model results where the adjusted  $R^2$  was 0,878, we accept the model as it is greater than 0.65 using the rule of thumb. The  $R^2$  was greater than 0.5 (50%) as it was 0.897 (89.7%) hence we accept the model. It can be concluded that explanatory variables account for 87.8% of the variation in the dependent variable, while the error term only accounts for 12.2%.

Table 4: showing coefficients

| Model                        | B     | Std. Error | Beta  | T      | Sig.    |
|------------------------------|-------|------------|-------|--------|---------|
| (Constant)                   | -.205 | 6.238      |       | -.033  | .974    |
| Age                          | -.512 | .073       | -0.74 | -1.109 | .072*   |
| Gender                       | .717  | 1.297      | -0.33 | -.553  | .584    |
| Total number of goats owned  | .333  | .028       | .844  | 11.895 | .000*** |
| Experience                   | .889  | .381       | .187  | 2.333  | .026**  |
| Market channel               | .056  | 2.750      | .001  | .020   | .040**  |
| Access to extension services | .373  | 1.396      | .088  | .124   | .920    |
| Educational level            | .257  | .205       | .568  | 3.725  | .042**  |

\*\*\* Significance at 1%; \*\* Significance at 5%; \* Significance at 10%

Source: own0survey (2025)

#### 4.2.1. THE LINEAR REGRESSION MODEL EQUATION

The equation of the regression model of the factors affecting commercialization can be expressed as follows:

$$Y = -0.205 - 0.512Ag + 0.717G + 0.333N + 0.889Exp + 0.056MC + 0.173A + 0.257Edu$$

#### 4.2.2. AGE

The table above shows that the age of farmers has a negative coefficient of -0.512 and this suggests that as the value of the independent rises, the dependent variable tends to decrease whilst holding the other factors in constant. The p-value in the regression is less than the 10% (0.10) significance level and it is 0.072. This result shows that the variable is statistically significant. There is a non-zero correlation between the ages of farmers as a factor variable as it affects goat commercialization negatively. This study concurs with (Zamokwakhe , et al., 2021), numerous studies have found, and that a farmer's age reflects their level of experience.

#### **4.2.3. TOTAL NUMBER OF GOATS OWNED**

The results obtained from the analysis revealed a positive coefficient value of 0.333 and keeping the other variables fixed, this shows that the independent variable's value tends to rise while the dependent variable tends to fall. However, the p-value for the regression is lower than both the 1% (0.01) and 5% (0.05) significance levels as it is 0.00. These results show that the variable is statistically significant. There is a non-zero correlation between the number of goats owned as a factor variable and the goat commercialization of smallholder farmers.

#### **4.2.4. EXPERIENCE OF FARMERS**

The table 4 above shows that regression analysis revealed a positive coefficient of 0.889 and it shows that the mean of the dependent variable tends to rise as the value of the independent variable does whilst holding other variables constant. As a result of the regression, the p-value is lower than the 5% (0.05) significance level and it is 0.026. The results show that there is a non-zero correlation and this variable is statistically significant therefore, the experience of farmers has a positive relationship with goat commercialization of smallholder farmers. This study concurs with that of (Lwelamira.J & Kifaro, 2015); (Kiptot & Franzel, 2016), the technical expertise and knowledge required to boost productivity may be lacking among smallholder farmers. Investing in training and extension services has been shown to have a positive impact on the commercialization of smallholder goat farming.

#### **4.2.5. MARKET CHANNEL**

The results from the table 4 revealed that the market channel they use to sell their goats is the informal market. From the analysis done, the market channel has a positive coefficient of 0.056 and this shows that, while keeping other variables fixed, when the value of the independent variable rises, the mean of the dependent variable similarly tends to rise. As a result of the regression, the p-value is lower than the 5% (0.05) level of relevance as it is at 0.04. The results obtained indicate that the variable is statistically significant and therefore there is a non-zero correlation between smallholder farmers' access to the market and the commercialization of goat farming. This study agrees with a study done in Kenya by (Ouma & Abdulai, 2016), access to market information had a significant impact on the commercialization of smallholder goat farming, the market's needs, prices, and distribution systems could be unknown to smallholder farmers,

#### 4.2.6. EDUCATIONAL LEVEL

The results obtained on table 4 show a positive coefficient of 0.257 and the results data shows that, while maintaining other factors constant, the mean of the dependent variable tends to increase as well as the value of the independent variable. As a result of the regression, the p-value is lower than the 5% (0.05) level of relevance and it is 0.042. The results show that there is a non-zero correlation and this variable is statistically significant therefore, the educational level of farmers has a positive relationship with goat commercialization by smallholder farmers.

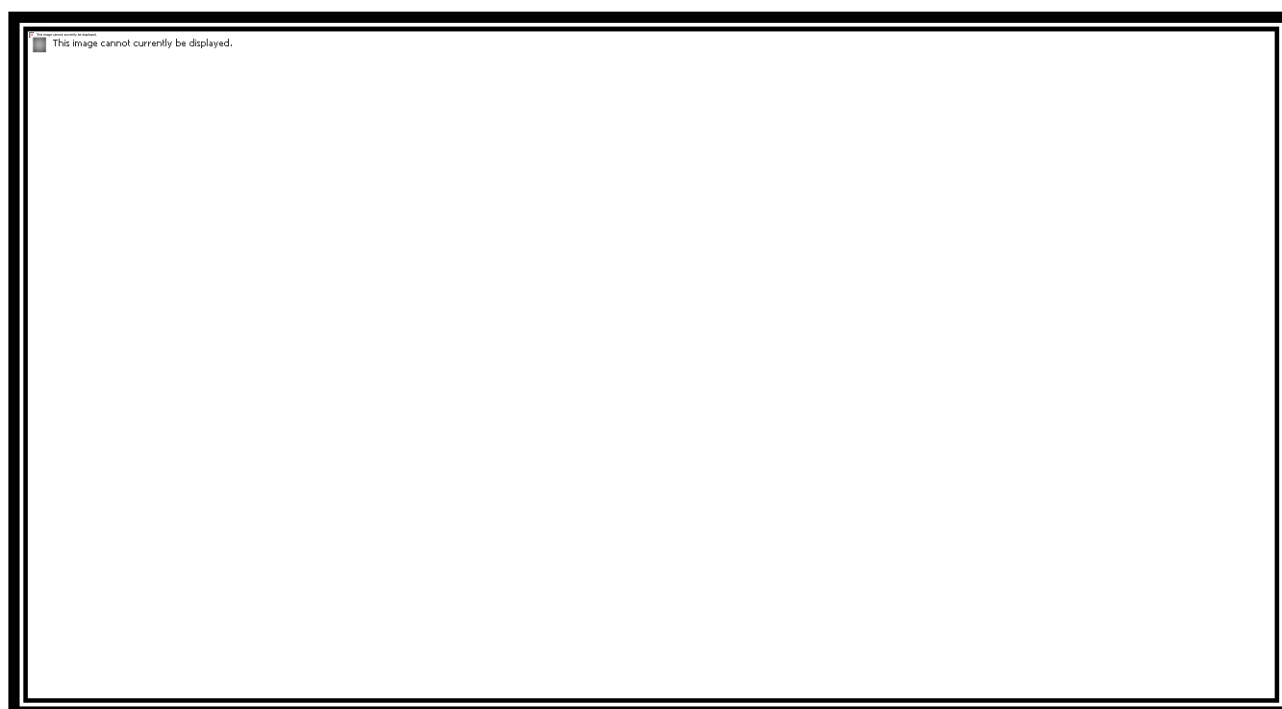
### 4.3. OBJECTIVE 3: TO ANALYZE THE CHALLENGES THAT ARE BEING FACED BY GOAT FARMERS

Table 5: Results for likert scale

| Challenges      | Frequency<br>of<br>respondents<br>on 1 scale | Frequency<br>of<br>respondents<br>on 2 scale | Frequency<br>of<br>respondents<br>on 3 scale | Frequency<br>of<br>respondents<br>on 4 scale | Scale<br>means<br>ranking |
|-----------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|---------------------------|
| Disease         | 4                                            | 12                                           | 23                                           | 1                                            | 2                         |
| Theft           | 36                                           | 3                                            | 1                                            | 0                                            | 1                         |
| Predators       | 26                                           | 13                                           | 1                                            | 0                                            | 1                         |
| Drought         | 36                                           | 3                                            | 1                                            | 0                                            | 1                         |
| Poor<br>grazing | 31                                           | 5                                            | 4                                            | 0                                            | 1                         |

|                    |    |    |    |    |   |
|--------------------|----|----|----|----|---|
| Market information | 1  | 2  | 5  | 32 | 4 |
| Title deeds        | 0  | 1  | 2  | 37 | 4 |
| Labor availability | 11 | 26 | 3  | 0  | 2 |
| Improved breeds    | 1  | 1  | 6  | 32 | 4 |
| Extension services | 1  | 9  | 11 | 19 | 3 |
| Housing            | 2  | 4  | 29 | 5  | 3 |

Source: own survey (2025).



*Figure 3: Mean scale ranking for Likert scale results*

The results on the table above shows that market information, title deeds and improved breeds are the most challenges that are being faced by smallholder famers in Murewa district

on goat commercialization whilst theft, predators, and poor grazing are least challenges on their goat commercialization.

#### **4.3.1. DISEASES**

From the results obtained from the data analysis, diseases were a minor problem to the goat farmers in Murewa District as they are able to manage them but however, most attention is given to the kids since they are the ones who are at big risk of being infected by the diseases.

#### **4.3.2. THEFT**

As shown from the results on the graph in figure 3 above, theft has been found as a minor challenge to goat farmers of Murewa District Mashonaland east province. Most of the goat smallholder farmers practice tethering for rearing their animals hence they are low cases of theft, unlike the use of free range where the goats are just left to move freely without close monitoring.

#### **4.3.3. PREDATORS**

The smallholder farmers reported that predators were a smaller problem affecting goat production. The farmers in Murewa District reported that they often face challenges of snakes and wild dogs, especially for farmers who practiced free-range rearing of goats, and in Murewa District, most of the goat farmers' use tethering for rearing goats.

#### **4.3.4. DROUGHT**

Drought is a minor challenge to the smallholder goat farmers as in Murewa District it is in the farming natural region 3 with high rainfall and moderate temperatures that are needed for the growth of grass and trees which are then used as a source of food for the goats. Also, the goats can survive by feeding on the bark of trees.

#### **4.3.5. POOR GRAZING**

The study disclose that poor grazing is also a small challenge to smallholder farmers in Murewa District as most of them are A1 farmers with a boundless of land with grazing lands with plants such as blackjack, trees such as Munhondo, Msasa, Mpfuti that are the best source of food for their nutrition. However, if the total number of goats and other livestock such as cattle and sheep increases, then there is likely to be a challenge of grazing as there is an increase in deforestation as most farmers rely on trees for their source of energy and also the grasses are used for thatching the households' houses.

#### **4.3.6. MARKET INFORMATION**

As indicated by the results, market information is a major challenge to smallholder farmers in Murewa District ward 30. The farmers lack information on the registered markets which are

formal markets, how the goats are graded, and what age to sell their goats so that they make more money. Due to the lack of information on markets, the farmers end up slaughtering at their homes and selling to middlemen and butcheries at lower prices and these middlemen and butcheries then sell the meat to the final users at higher prices so as to obtain profits. This study agrees with that done (Napasirth & Luisa, 2014); (WinrockInternatiol, 2019), lack of knowledge about market routes and prices makes it difficult for smallholder farmers to access markets. In addition, smallholder farmers have trouble producing enough food to meet both the quality and quantity demands of the market.

#### **4.3.7. TITLE DEEDS**

The results from the study indicated that title deeds are a major challenge to the households in Murewa District, when farmers want to take loans from financial institutions, they struggle due to the absence of collateral security that is needed by the institutions to obtain loans. Also, the farmers are not able to build structures such as goat dip tanks as they live in fear of being moved from the area.

#### **4.3.8. LABOR AVAILABILITY**

As indicated by the research study, labor availability is a minor challenge as little labor is required in the rearing of goats by the smallholder farmers as one person can herd the whole goats if it's a free-range method, and if it's tethering, a single person can be involved.

#### **4.3.9. POOR BREED**

The study revealed that poor goat breed is a serious challenge to smallholder farmers. Most of the farmers rear the indigenous breed such as Mashona and Matebele breed and they lack desirable traits as compared to exotic breeds such as the Boer goat which is good for meat or Kalahari red breed which fetches satisfactory prices on both local and international markets. The farmer's little money is not enough for buying pure breeds which they can use for improving their stock hence they end up continuing to inbreed their goats thereby resulting in no change in the indigenous breeds. This study concurs with a number of studies (Ayinde & Oyekale, 2014); (Lwelamira.J & Kifaro, 2015), access to high-quality inputs is essential for increasing production in smallholder goat farming

#### **4.3.10. EXTENSION SERVICE**

From the results obtained, it can be concluded that extension services provision is a serious challenge that is being faced by goat farmers in their production. The farmers reported that few extension officers from AGRITEX visit them at irregular intervals. (Ayinde, , et al.,



2017), stated that 68% of the smallholder goat farmers in the Choma District of Zambia lack the provision of extension services and on-farm training for skills and development in their goat farming. Also, poor road networks and a lack of motorbikes discourage the movement of extension officers is made it difficult to visit each and every household in the Murewa District.

#### ***4.3.11. HOUSING***

Unlike cattle housing, goat housing structure requires special infrastructure for their housing thus making it expensive to construct for example roofing materials which are used to avoid water entering inside, and the housing requires security from theft and predators. From the results, it can be concluded that the housing challenge is at a moderate level for the farmers.

## CHAPTER 5

### 5.0. CONCLUSION AND RECOMMENDATIONS

This chapter will look at the summary of the study, the conclusion that can be drawn from this study and recommendations. This study sought to evaluate the commercialization of goats for smallholder farmers while also identifying potential that may arise from communication as well as the difficulties they already face. This chapter aims to draw conclusions about the degree of goat commercialization, the difficulties goat farmers face, and the variables that influence goat commercialization for smallholder farmers. I then offer suggestions that could enhance goat farming, thereby boosting commercialization.

#### 5.1. CONCLUSIONS

The results on measuring the level of goat commercialization shows that there is an increase in both the minimum and maximum goat commercialization index scores, indicating that the level of commercialization has improved. This is supported by the 2024 index, which indicates a gradual transition away from subsistence farming and an increase in both the minimum and maximum index scores. The research area's level of commercialization was 45%, which is considered semi-commercialization.

The results on the factors affecting goat commercialization shows that, one of the most important factors is how many goats the farmers possess overall and this affects the commercialization of goats since farmers with a limited number of goats limit sales. The survey also revealed that farmers in Murewa District with more goats sold more than those with fewer goats. The experience of farmers also plays a crucial role as it enables farmers to have skills in problem-solving, farm management, and organizational skills which are essential in the production of goats over the long and short terms. The educational level influences farmers on good decision skills and it improves their knowledge capacity, additionally, the likelihood that a person will adopt new technology and accept the risk of commercialization increases with education level.

On diseases the farmers revealed that external parasites are not alarming as compared to their counterparts which are internal parasites and they control them through dosing at the beginning of every season. The household farmers in Murewa District have few goats hence

the demand for labor is still low. The famers in Murewa district lack finance for purchasing pure breeds like Boer to stimulate their commercialization. The results show that in Murewa District market information, title deeds and improved breeds are the most challenges that are being faced by smallholder famers on goat commercialization whilst theft, predators, and poor grazing are least challenges on their goat commercialization.

If smallholders engage more in goat production, goat commercialization has the ability to increase their standard of living, as seen by the research area's results, which show a transition from subsistence farming to semi-commercialization. The biggest obstacles to household goat production are market information, title deeds, and improved breeds, followed by the availability of housing and extension services. Age, the number of goats a person owned, experience, and educational level all had a substantial impact on the commercialization of smallholder goats.

## **5.2. RECOMMENDATIONS**

Commercializing goat production and getting rid of more goats at once can help smallholder farmers minimize costs by splitting expenses like variable costs. The farmers should form cooperatives within the community and this helps to raise capital to buy improved breeds such as exotic breeds which have more desirable characteristics that make them grow faster thereby enabling the quick sale and earning quick returns. Policymakers and stakeholders must prioritize efforts to address the challenges that are being faced by smallholder farmers, for example, the A1 farmer should be given access to title deeds to make them able to source funds from financial institutions, title deeds are needed as a form of collateral security and invest in their goat production, access to extension service should be made available to all farmers as they help to farmers through training and providing information concerning goat production and also promote smallholder goat farming's growth and sustainability. All the farmers who are involved in goat production should gather and discuss a place to sell their goats thus creating their own market, and lastly, they can discuss and sets prices that are uniform for selling their goats.

### **5.2.1. OBJECTIVE 1: LEVEL OF COMMERCIALISATION**

- Goat farmers should try to improve number of goats they produce per year by forming cooperatives.
- Goat farmers should practice cross breeding, Mashona breed with exotic breeds like Boer, Kalahari, and Savannah to increase growth rate and meat production.
- Farmers should keep financial and production records to increase effectiveness and efficiency of production.

### **5.2.2. OBJECTIVE 2: FACTORS AFFECT GOAT COMMERCIALIZATION**

1. Age
  - Younger farmers should be encouraged to engage more in goat production, they are more energetic and open to learning modern methods.
2. Number of goats owned
  - Support smallholders to grow their herds through loans subsidies or goat pass-on schemes.
3. Extension services
  - Extension services should teach farmers about improved breeds, feeding, disease control and record keeping.
4. Marketing
  - Improve access to reliable markets through market linkage and cooperatives.

### **5.2.3. OBJECTIVE 3: CHALLENGES FACED ON GOAT COMMERCIALIZATION**

- Government should speed up the process of issuing title deeds to farmers for collateral security when they need funding.
- They should set up systems to share market prices and buyer contacts through radio, mobile phones, or bulletin boards.
- The government and NGOs should connect farmers directly to markets.

- Support breeding programs that improves productivity.

#### ***5.2.4. AREA OF FURTHER RESEARCH***

After studying on the factors that affects goat production like gender, age, education, extension help, experience level, market and number of goats owned the researcher recommended further studies on the analysis on more factors that affects the commercialization of goats from flourishing. More so there is need to have further researches on the possible systems that could be introduced to farmers so that they adopt and improve their breeding (artificial insemination) to maximize their production.

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## **APPENDICES**

### **APPENDIX 1**

Questionnaire number.....

Date of interview.....

#### **Survey Questionnaire**

Good morning/afternoon, my name is Kariwo Lincorn and I'm studying for a Bachelor of Science degree in Agricultural Economics and Management at the Bindura University of Science Education. As part of the degree program, I am carrying out a research study on assessing the commercialization of goat farming in Nyamanjiwa Farm Ward 30 under the Murewa District Mashonaland East. The information you provide is confidential and only

educational purposes will be served by it. We appreciate your efforts in completing this form as completely and truthfully as you can.

### 1). Assessing the level of commercialization

1). How many goats do you own? ☐

2). How many goats have you produced in the past three years?

a) year 1 ☐ b) year 2 ☐ c) year 3 ☐

3). How many goats have you sold in the past three years?

a) Year 1 ☐ b) Year2 ☐ c) Year3 ☐

4 What reasons do you keep your goats? a) Consumption ☐ Selling ☐ breeding ☐

d) Others (specify).....

### b) The factors that affect goat commercialization

16. Where do you sell your goats? a) Informal market ☐ formal markets ☐

17. Gender of the household head? a) Male ☐ b) Female ☐

18. Age of household head? a) 16-24years ☐ b) 25-34years ☐ c) 35-44years ☐ d) 45-54years ☐ e) ≥ 55years ☐

19. How many goats do you own? ☐

20. How long have you been involved on goat production? a) Never been ☐ b) less than a year ☐ c) 1-5 years ☐ d) 6 and above ☐

21. What is your educational level a) never been ☐ b) primary ☐ c) secondary ☐ d) tertiary? ☐

22. Access to extension services provision a) Yes ☐ b) No ☐

### c). Challenges that are faced by the smallholder farmers

(Tick where applicable)

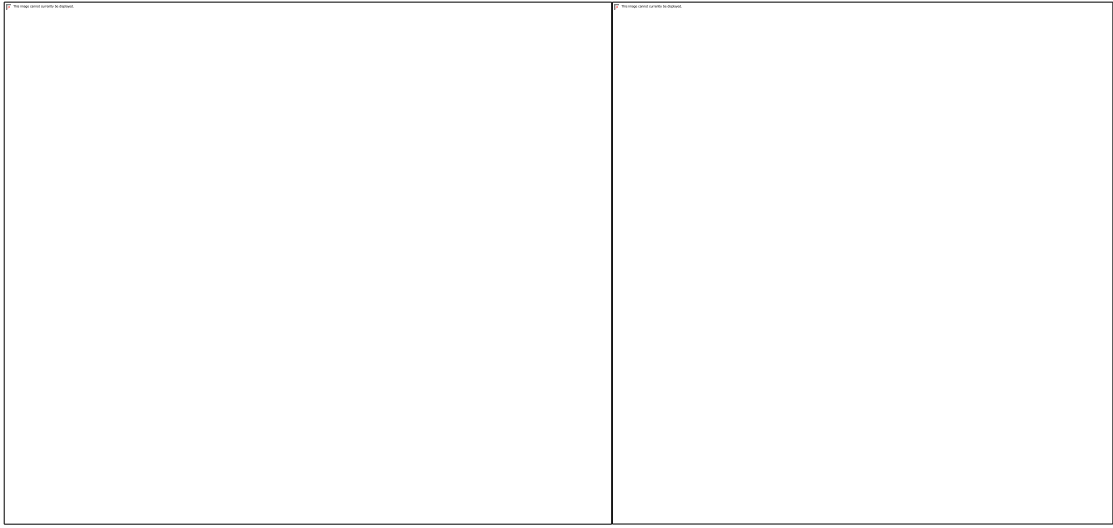
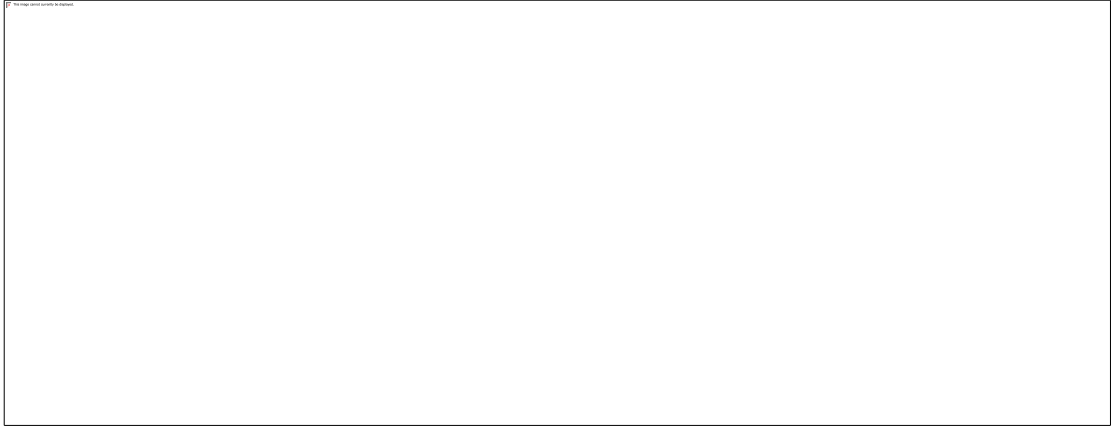
|  |                 |
|--|-----------------|
|  | <b>RANKINGS</b> |
|  |                 |

| <b>Challenges</b>            | <b>1) Never</b> | <b>(2) Rarely</b> | <b>(3) moderate level</b> | <b>(4) very frequently</b> |
|------------------------------|-----------------|-------------------|---------------------------|----------------------------|
| Diseases                     |                 |                   |                           |                            |
| Theft                        |                 |                   |                           |                            |
| Predators                    |                 |                   |                           |                            |
| Drought                      |                 |                   |                           |                            |
| Poor grazing                 |                 |                   |                           |                            |
| Market provision information |                 |                   |                           |                            |
| Little deeds                 |                 |                   |                           |                            |
| Educational level            |                 |                   |                           |                            |
| Labour                       |                 |                   |                           |                            |
| Improved breeds              |                 |                   |                           |                            |
| Extension services delivery  |                 |                   |                           |                            |

Thank you for your participation!!!

## **APPENDIX 2: DATA SET**

## APPENDIX 3 STUDY AREA



## APPENDIX 4 PERMISSION LATER

For more information, see the Appendix 4